

# HA11221

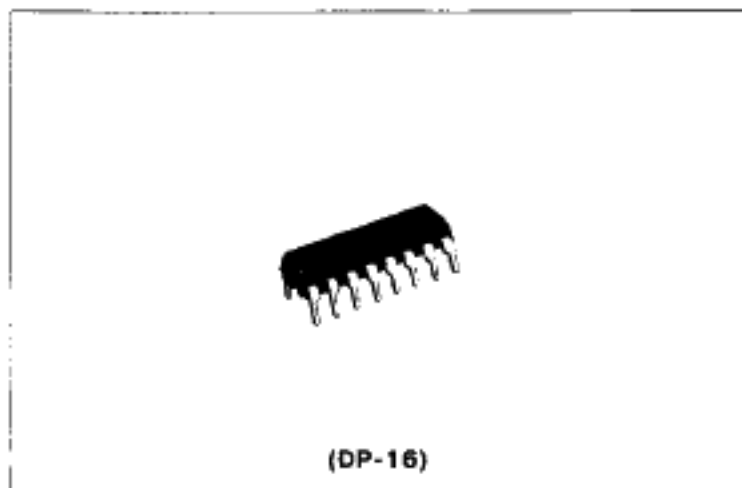
## B/W TV Picture IF Amplifier

### FUNCTIONS

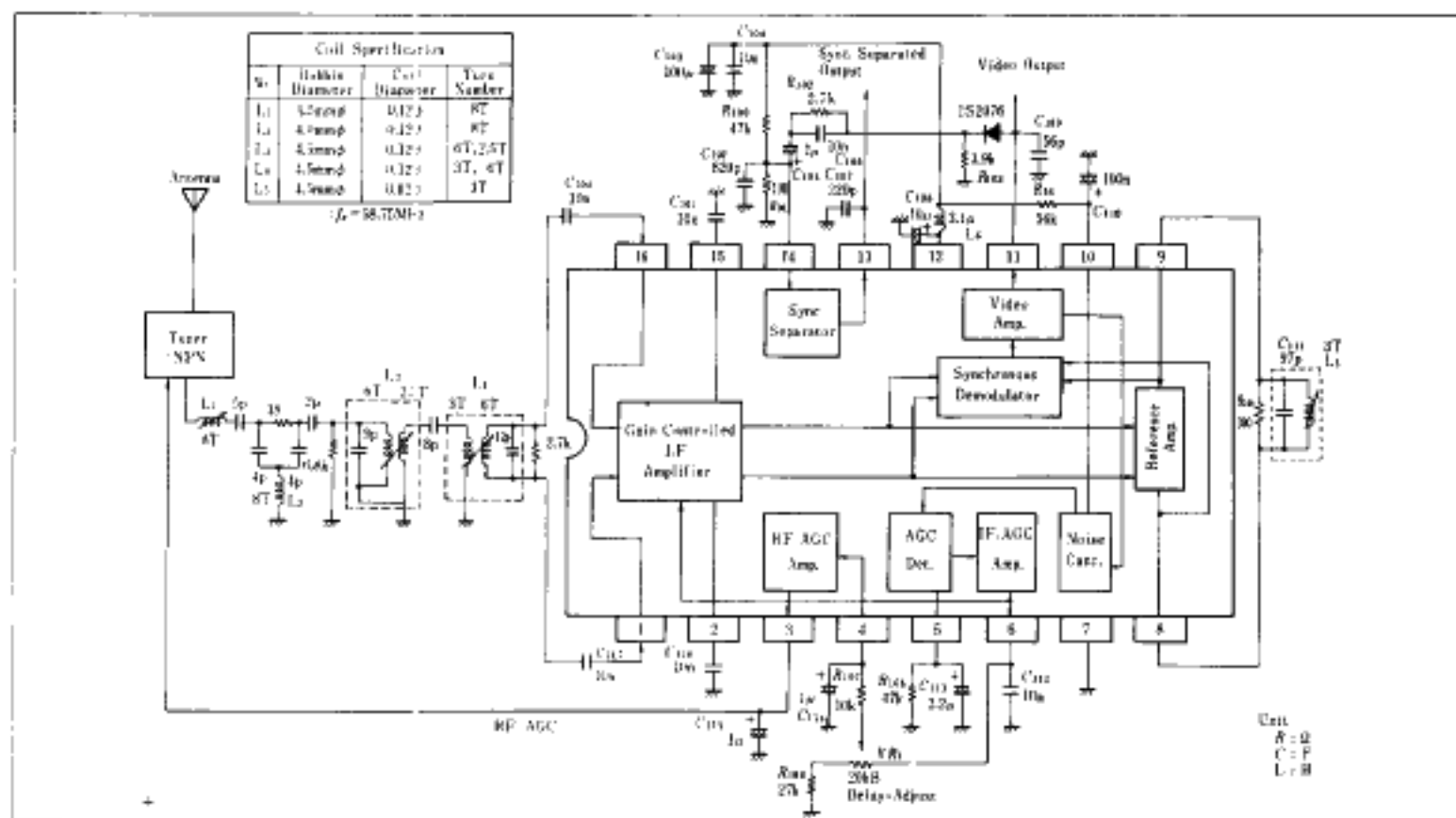
- Picture IF Amplifier
- Video Detector
- AGC Detector
- Noise Canceller
- Forward AGC
- Sync. Separator

### FEATURES

- Particularly useful in B/W TV's with bipolar tuner.
- Low external parts count.
- Designed to operate at  $V_{CC}$  down to 6.5V.
- Video output level stabilized, independent of supply voltage and ambient temperature.



### BLOCK DIAGRAM



### ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ unless otherwise specified)

| Item                    | Symbol        | Ratings      | Unit             |
|-------------------------|---------------|--------------|------------------|
| Supply Voltage          | $V_{CC}$      | 15*          | V                |
| Max. Input Voltage      | $V_{in\ max}$ | 3            | V <sub>p-p</sub> |
| Video Output Current    | $I_{O1}$      | 3            | mA               |
| Max. Applicable Voltage | 3, 4 pin      | $V_{3, V_4}$ | $V_{CC}$         |
|                         | 6 pin         | $V_6$        | 6.3              |
| Power Dissipation       | $P_T$         | 850**        | mW               |
| Operating Temperature   | $T_{op}$      | -20 to +65   | $^\circ\text{C}$ |
| Storage Temperature     | $T_{stg}$     | -55 to +150  | $^\circ\text{C}$ |

\* Value at  $t \leq 60$  sec min.

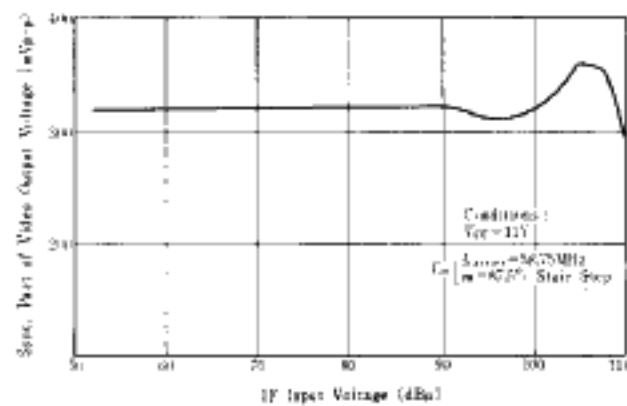
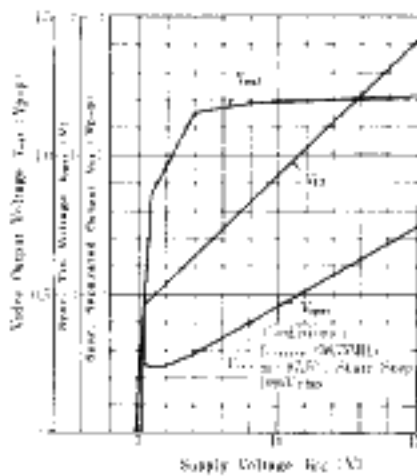
\*\* Value at  $T_a = 60^\circ\text{C}$ .

■ ELECTRICAL CHARACTERISTICS ( $V_{CC}=11V$ ,  $f_s=58.75MHz$ ,  $T_a=25^\circ C$ )

| Item                   | Symbol        | Test Conditions                     | min. | typ. | max. | Unit     |
|------------------------|---------------|-------------------------------------|------|------|------|----------|
| Input Sensitivity      | $V_{i(sens)}$ | $m=87.5\%$                          | 37   | 42   | 47   | $dB_\mu$ |
| Video Output Voltage   | $V_{out}$     | $V_{i,s}=10mV_{rms}$ , $m=87.5\%$   | 0.95 | 1.21 | 1.47 | Vp-p     |
| Min. RF AGC Voltage    | $V_{i, min}$  | $V_{i,s}=0$                         | 1.6  | 1.8  | 2.0  | V        |
| Max. RF AGC Voltage    | $V_{i, max}$  | 4 pin $\rightarrow$ GND             | 6.0  | 7.0  | 8.0  | V        |
| Sync. Separated Output | $V_{i,s}$     | Vertical Sync. Pulse                | 9.0  | 10.3 | —    | V        |
| Video Band Width       | $G_W$         | $V_{out}(f=6MHz)/V_{out}(f=100kHz)$ | -13  | -6   | -1   | dB       |
| Sync. Tip Voltage      | $V_{sync}$    | $V_{i,s}=10mV_{rms}$                | 4.64 | 5.14 | 5.64 | V        |
| Supply Current         | $I_{CC}$      | $V_{i,s}=0$                         | 33   | 41   | 53   | mA       |

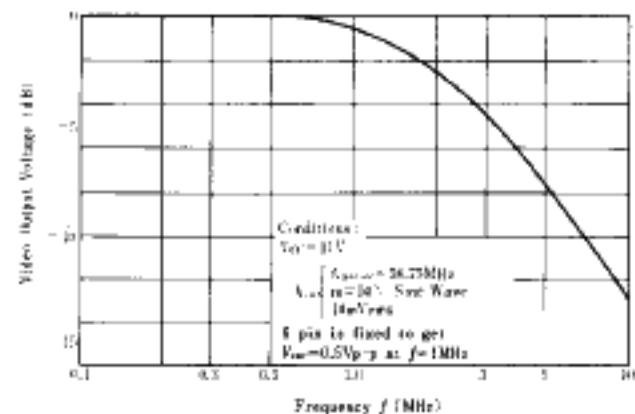
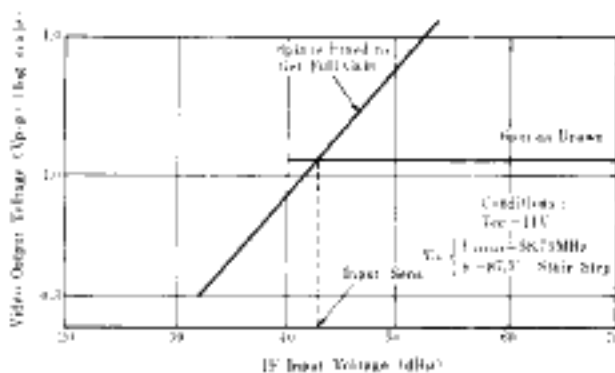
VIDEO OUTPUT VOLTAGE, SYNC. TIP VOLTAGE AND SYNC. SEPARATED OUTPUT VS. SUPPLY VOLTAGE

MAXIMUM INPUT CHARACTERISTICS

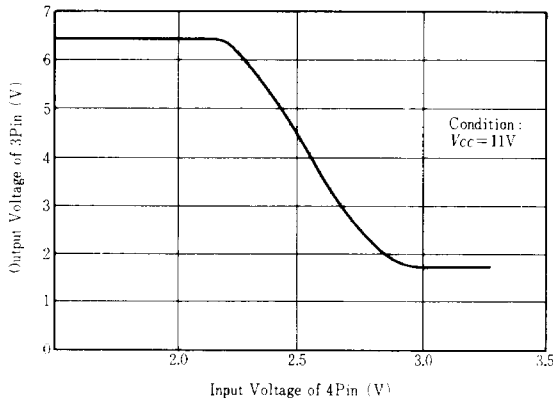


INPUT SENSITIVITY CHARACTERISTICS

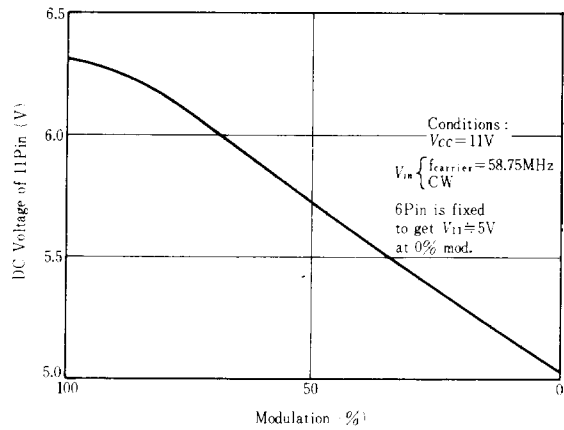
VIDEO OUTPUT VOLTAGE VS. FREQUENCY



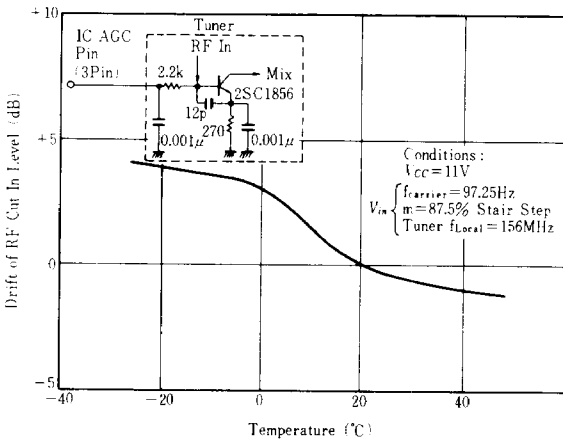
**INPUT-OUTPUT CHARACTERISTICS OF RF AGC CIRCUIT**



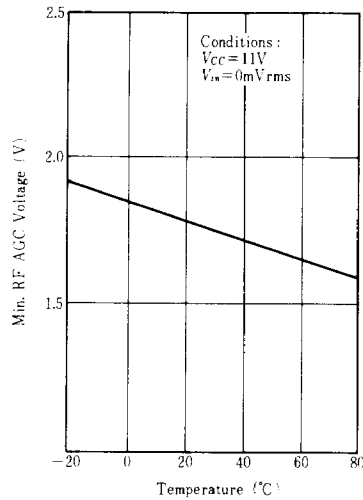
**LINEARITY**



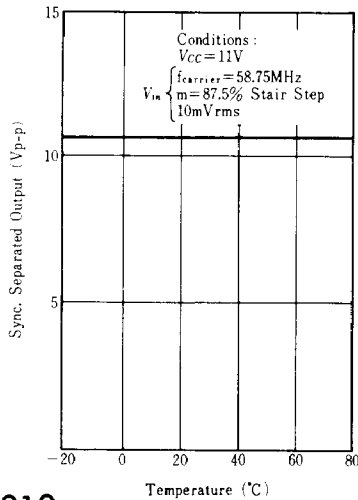
**AGC CUT IN LEVEL VS. TEMPERATURE**



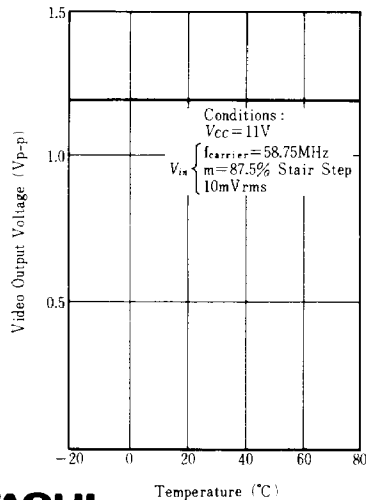
**MIN. RF AGC VOLTAGE VS. TEMPERATURE**



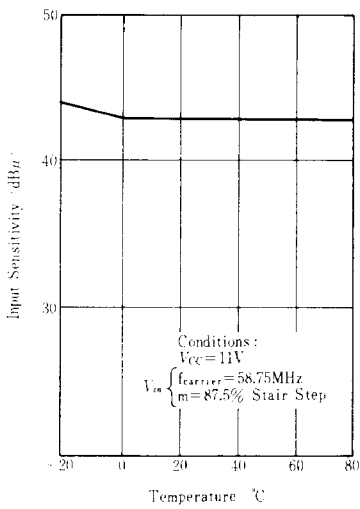
**SYNC. SEPARATED OUTPUT VS. TEMPERATURE**



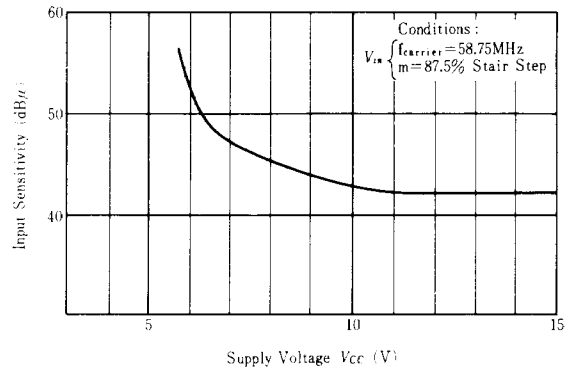
**VIDEO OUTPUT VOLTAGE VS. TEMPERATURE**



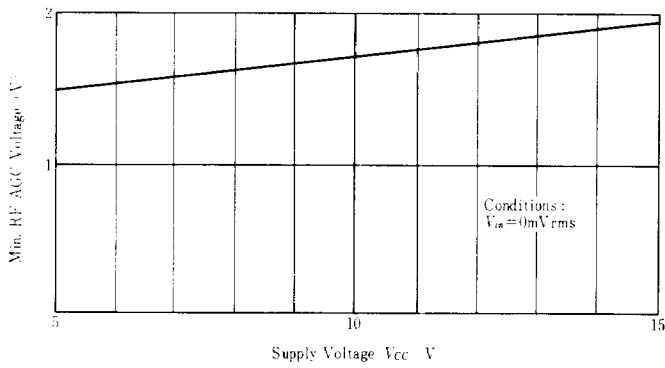
**INPUT SENSITIVITY VS. TEMPERATURE**



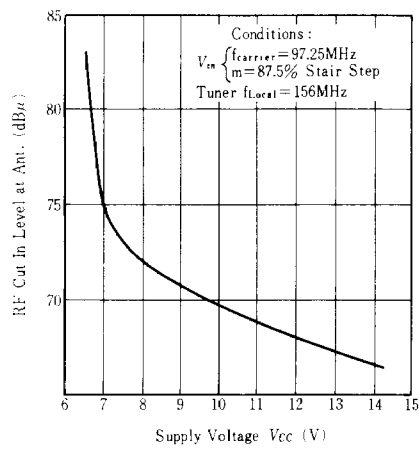
**INPUT SENSITIVITY VS. SUPPLY VOLTAGE**



**MIN. RF AGC VOLTAGE VS. SUPPLY VOLTAGE**



**AGC CUT IN LEVEL VS. SUPPLY VOLTAGE**



**VIDEO OUTPUT VOLTAGE VS. LOCAL OSC. FREQUENCY**

